resolving the polynucleotide fragments by electrophoresis; and

detecting the fragments by means of the chromophore or fluorophore.

32. A method of determining the sequence of a polynucleotide by analyzing polynucleotide fragments generated by a polynucleotide sequencing technique, each of said polynucleotide fragments being tagged with a chromophore of fluorophore, comprising:

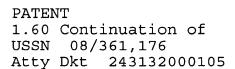
introducing the polynucleotide fragments tagged with chromophores of fluorophores into an electrophoretic medium;

separating the polynucleotide fragments by electrophoresis in said electrophoretic medium;

detecting the polynucleotide fragments separated by electrophoresis by means of the chromophores or fluorophores; and

determining a polynucleotide sequence from which the polynucleotide fragments were generated based on the polynucleotide fragments detected.

- 33. The method according to claim 31, wherein the polynucleotide is DNA
- 34. The method according to claim 31, wherein the method is a chain termination method using one or more primer oligonucleotides and said primer oligonucleotides are tagged with the chromophores or fluorophores.
- 35. The method according to claim 31, wherein the method is a chemical degradation method and the polynucleotide fragments are tagged with the chromophores or fluorophores.



- 36. The method according to claim 31, wherein the tagged fragments are obtained from a primer extension reaction in which the primer is tagged with a chromophore or fluorophore such that the tagged fragments resulting from at least one of the sequencing reactions A, C, G and T is distinguishable from other fragments by the spectral characteristics of the tag.
- 37. The method according to claim 31, wherein the tagged fragments from at least two of the sequencing reactions A, C, G and T are distinguishable from one another and from other fragments by the spectral characteristics of the tags.
- 38. The method according to claim 31, wherein the tagged fragments from all of the sequencing reactions A, C, G and T are distinguishable from one another by the spectral characteristics of the tags.
- 39. The method according to claim 31, wherein the polynucleotide fragments are provided with an amino group, which is coupled to a dye molecule.
- 40. The method according to claim 31, wherein the step of detecting the polynucleotide fragments is performed during the electrophoresis.
- 41. The method according to claim 32, wherein the polynucleotide is DNA.
- 42. The method according to claim 32, wherein the method is a chain termination method using one or more

primer oligonucleotides and said primer oligonucleotides are tagged with the chromophores or fluorophores.

- 43. The method according to claim 32, wherein the method is a chemical degradation method and the polynucleotide fragments are tagged with the chromophores or fluorophores.
- 44. The method according to claim 32, wherein the tagged fragments are obtained from a primer extension reaction in which the primer is tagged with a chromophore or fluorophore such that the tagged fragments resulting from at least one of the sequencing reactions A, C, G and T is distinguishable from other fragments by the spectral characteristics of the tag.
- 45. The method according to claim 32, wherein the tagged fragments from at least two of the sequencing reactions A, C, G and T are distinguishable from one another and from other fragments by the spectral characteristics of the tags.
- 46. The method according to claim 32, wherein the tagged fragments from all of the sequencing reactions A, C, G and T are distinguishable from one another by the spectral characteristics of the tags.
- 47. The method according to claim 32, wherein the polynucleotide fragments are provided with an amino group, which is coupled to a dye molecule.

- 48. The method according to claim 32, wherein the step of detecting the polynucleotide fragments is performed during the electrophoresis.
- 49. A method for determining the sequence of a polynucleotide which comprises:

providing polynucleotide fragments tagged with chromophores or fluorophores, wherein the chromophores or fluorophores are distinguishable from others by their spectral characteristics;

resolving the polynucleotide fragments by electrophoresis; and

detecting the fragments by means of the chromophores or fluorophores.

50. A method for determining the sequence of a polynucleotide which comprises:

providing fragments of the polynucleotide to be sequenced which are tagged with chromophores or fluorophores, wherein the fragments from one or more of the four sequencing reactions A, C, G or T are distinguishable from fragments of the other reactions by their spectral characteristics;

resolving the fragments by electrophoresis; and detecting the fragments as they are being resolved by means of the spectral characteristics of the chromophores or fluorophores.

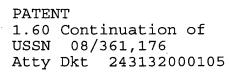
- 51. The method according to claim 49 wherein the polynucleotide is DNA.
- 52. The method according to claim 49, wherein the method is a chain termination method using one or more



primer oligonucleotides and primer oligonucleotides are labeled with the chromophores or fluorophores.

- 53. The method according to claim 49, wherein the method is a chemical degradation method and the polynucleotide fragments are labeled with the chromophores or fluorophores.
- 54. The method according to claim 49, wherein the tagged fragments are obtained from a primer extension reaction in which the primer is tagged with a chromophore or fluorophore such that the tagged fragments resulting from at least one of the sequencing reactions A, C, G and T is distinguishable from other fragments by the spectral characteristics of the tag.
- 55. The method according to claim 49, wherein the tagged fragments from at least two of the sequencing reactions A, C, G and T are distinguishable from one another and from other fragments by the spectral characteristics of the tags.
- 56. The method according to claim 49, wherein the tagged fragments from all of the sequencing reactions A, C, G and T are distinguishable from one another by the spectral characteristics of the tags.
- 57. The method according to claim 49, wherein polynucleotide fragments are provided with an amino group, which is coupled to a dye molecule.
- 58. The method according to claim 49, wherein the DNA fragments are provided with a protected amino group, which





is deblocked and coupled to a dye molecule subsequent to the sequencing reaction.

- 59. The method according to claim 50 wherein the polynucleotide is DNA.
- 60. The method according to claim 50, wherein the method is a chain termination method using one or more primer oligonucleotides and primer oligonucleotides are labeled with the chromophores or fluorophores.
- 61. The method according to claim 50, wherein the method is a chemical degradation method and the polynucleotide fragments are labeled with the chromophores or fluorophores.
- 62. The method according to claim 50, wherein the tagged fragments are obtained from a primer extension reaction in which the primer is tagged with a chromophore or fluorophore such that the tagged fragments resulting from at least one of the sequencing reactions A, C, G and T is distinguishable from other fragments by the spectral characteristics of the tag.
- 63. The method according to claim 50, wherein the tagged fragments from at least two of the sequencing reactions A, C, G and T are distinguishable from one another and from other fragments by the spectral characteristics of the tags.
- 64. The method according to claim 50, wherein the tagged fragments from all of the sequencing reactions A, C,



G and T are distinguishable from one another by the spectral characteristics of the tags.

- 65. The method according to claim 50, wherein polynucleotide fragments are provided with an amino group, which is coupled to a dye molecule.
- 66. The method according to claim 50, wherein the DNA fragments are provided with a protected amino group, which is deblocked and coupled to a dye molecule subsequent to the sequencing reaction.
- 67. The method according to claim 57, wherein the products of each of the different sequencing reactions are coupled with a different color dye, aliquots of the dye labeled reaction are electrophoresed, and detected by means of the dye after their separation.
- 68. The method according to claim 65, wherein the products of each of the different sequencing reactions are coupled with a different color dye, aliquots of the dye labeled reaction are electrophoresed, and detected by means of the dye after their separation.
- 69. The method according to claim 58, wherein the products of each of the different sequencing reactions are coupled with a different color dye, aliquots of the dye labeled reaction are electrophoresed, and detected by means of the dye after their separation.
- 70. The method according to claim 66, wherein the products of each of the different sequencing reactions are coupled with a different color dye, aliquots of the dye



labeled reaction are electrophoresed, and detected by means of the dye after their separation.

- 71. The method according to claim 56, wherein the tagged fragments are labeled with the fluorophores fluoresceln, eosin, tetramethyl rhodamine, and substituted rhodamine.
- 72. The method according to claim 64, wherein the tagged fragments are labeled with the fluorophores fluorescein, eosin, tetramethyl rhodamine, and substituted rhodamine.

